



State of Utah

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DIVISION OF OIL, GAS AND MINING

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November 3, 1999

TO: Minerals File

FROM: Anthony A. Gallegos, Senior Reclamation Specialist *aa*

RE: Site Inspection, Moab Salt Inc., Cane Creek Mine, M/019/005, Grand County, Utah

Date of Inspection: October 18, 1999
Time of Inspection: 1129 - 1530
Conditions: Cool, mostly clear skies
Participants: Ric York, Rick Cline, Moab Salt; Tony Gallegos, Doug Jensen, DOGM

Purpose of Inspection: To examine the mine site in consideration of a detailed review of the reclamation surety estimate

The inspection began with a brief meeting in the office with an aerial photograph of the entire site as a visual aid. The main focus of the meeting was to discuss elements of the original surety estimate which had changed. A copy of the 5/15/89 surety estimate was on hand and Moab Salt made a copy for providing edits to the Division. One item discussed was the three bonds recognized by the Division for three leases. Moab Salt currently has two leases rather than three. One of the two leases is with the BLM and the other is with State Lands. Both leases are believed to be for surface rights only. The Division reclamation estimate had previously acknowledged three bonds posted for three leases. This is one item which will need to be corrected as part of the surety estimate review.

It was pointed out that Moab Salt owns the section of railroad line within the property boundary. The property boundary stops on shortly beyond the railroad load out. The rest of the rail line leading all the way to the main spur is the property of Union Pacific.

The original surety estimate proposed a landfill, but the actual location of that landfill was not determined. Current candidate sites for the landfill would be the main mine shaft, or an area against the tailings dam.. The main shaft is 26 feet in diameter, lined, plugged, and approximately 2,400 feet deep. The main shaft is within the large reinforced concrete head frame structure.. The area against the tailings dam would not be available until the waste salts have been removed.

The original estimate mentioned some asbestos materials. Mr. York explained that some of the metal siding on the buildings was a product called "galbestos" which was galvanized steel with an asbestos coating. It's unknown at this time if this asbestos coating means this material has to receive special handling or disposal. There may also be asbestos in the ceiling tile in the office building and

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possibly some of the other office-type buildings. There may also be asbestos in the floor tiles or mastic used in laying the floor tiles in some of the buildings. These various materials may have to be sampled to determine if they actually contain asbestos.

The surety estimate mentioned that a majority of the pipe used in operations is metal. Mr. York agreed that this is still the case. A majority of the pipe used in the plant facilities to convey the liquids is metal pipe. They recently sold a lot of metal pipe as scrap, which would mean there is still a market for it.

A note on the salt waste or what has been referred to as the tailings. Moab Salt estimates there is approximately 2,000,000 cubic yards of salt waste in this area. They are currently dissolving this waste salt at the rate of 180,000 cubic yards per year. This dissolved salt is injected into the mine as part of their recovery system.. Once their recovery, or mining ceases, they are not allowed to inject brine solutions into the underground workings. The underground injection permit requires specific ratios of injected fluids to recovered fluids. Moab Salt will probably need to construct two disposal wells at the time of final reclamation to handle the waste brines from dissolving the salt tailings, or from clean up of salts from the ponds or salt contaminated soils. It was unclear which agency would regulate these disposal wells, but the Division's Oil and Gas section would be consulted.

Moab Salt currently has a separate bond for two wells and two shafts which are permitted as part of the underground injection permit. The amount of this bond is believed to be \$914,000. This bond was not formally recognized by the Division in the existing surety estimate. The details of what this bond covers will need to be reviewed. Moab Salt agreed to provide a copy of this bonding information in the immediate future.

The current reclamation estimate did not include line items for demolition and removal of a large number of structures at the site on the basis that the salvage value would cover these costs. Given the current condition of the structures and the current market for scrap steel it is believed that the salvage value would not cover these costs. Adding costs for demolition and removal or burial of these structures may significantly increase the reclamation estimate.

As a side note to the surety review, it was pointed out that the proposed oil and gas well adjacent to the Moab Salt property has not been created. A proposed agreement between the oil and gas company and Moab Salt was never finalized.

After the office meeting in the office we examined different portions of the site. The first area examined was the #3 Canyon. This area includes the #3 Canyon Sumps and french drain system. This is actually an earthen dam or berm, with five pumps connected to the french drain. These sumps intercept any seepage moving down this canyon and pump it back to the ponds or process plant. A sixth sump and pump is located downstream by the Moby Dam. The second dam in this same drainage is called the Moby Dam. This dam is believed to have been included in the original reclamation estimate. This dam functions more as a visual buffer than an actual hydrologic dam.

The next area examined was the #3 Pond System. Moab Salt generally harvests a six inch layer of salts from the ponds leaving approximately six inches on the pond liners. This may be useful information when estimating the volume of materials to be removed or dissolved when reclaiming the pond areas. There is generally not a lot of fill material available where the ponds are located. This would prevent burial of any significant amount of pond liner or other inert materials in this area.

The next area examined was the top of #2 Pond. Photos were taken at this location showing the general pond system, pipe lines, building, and salt load out. At this load out there was also a maintenance building and diesel storage.

The next area examined was the Main Pit - Dump Station. This dump station is located between the #1 and #2 pond systems. This dump station is a large concrete box which the scrapers drive over and dump the recovered salts into. The salts are then mixed with brines by a large propellor and piped to the processing plant. At this stop we discussed the rinsing process for the pond areas as part of final reclamation. Moab Salt pointed out the amount of water is not a limiting factor for rinsing the pond areas after they remove the liner. They have ample water rights from the Colorado River. The more difficult issue is how to handle the rinsing brines from the cleanup of these areas.

The next area examined was Well #13 as a typical example of a well head. This well head showed the drill stem which had been closed, but the drill area itself had not been seeded. The next area examined was injection well #24. This is a typical example of an injection well. This well is currently active. Photos were taken to document these typical well sites.

The next area visited was the salt waste area which includes the dam. Part of the dam embankment may be a suitable site for the landfill. Locating a landfill here may require upstream rerouting of the drainage. In any case, the state division for solid and hazardous waste may need to be consulted prior to planning a landfill.

We next walked around the plant area examining the majority of the various buildings. We examined the parts warehouse, which has some of the old asbestos coated corrugated steel, or the galbestos product. Some photographs were taken of the inside of the building showing the framework structure and the concrete slab floor estimated to be 6-8 inches thick. This building is a two-story, metal frame building with corrugated sheet-metal for the walls. The next building examined was the maintenance shop which is similar to the parts warehouse in most details except for the addition of an overhead crane and the metal infrastructure and reinforced concrete to support the crane.

From here we looked at the sizing building, which when looking from right to left, has three tanks connected to a kiln, then the flotation building and then the reagent building. We then walked through the reagent building, the flotation building and the crushing building. The crushing building is no longer in use since they no longer have bulk ore from underground mining. All their production comes from the evaporation ponds. The outer shell of the crushing building and the foundations are all that remains. The crushers have been removed.

The next building examined was the tailings building which is next to the crystalizer. The tailings building processes potash, or salt on an alternating basis. The next building examined was the adjacent crystalizer building. The crystalizer is no longer used and has been partially dismantled and burned a couple of times during some of the demolition work. Demolition and removal of the crystalizer building had been bid on by a demolition company. Mr. York believed the estimate came in around \$45,000. He agreed to research his files to provide the details of what that bid included.

The next building examined was the sizing building. This building has a number of screens, belts and elevators. After walking through this building we then visited the lab building which was a single story cinder block structure. From here we continued past through the other parts warehouse and n electric shop.

We then drove through and around the large storage buildings for salt, or potash. The two buildings are identical in size and construction. There is a conveyor running down the center of the buildings. The lower section of the walls are made of reinforced concrete with the arcing shell of the building being comprised mainly of wood.

We next went to the packaging warehouse located adjacent to the rail load out. This is one of the newer buildings, probably built around 1988. Next to this building is the rail load out which includes some screens and conveyors.

We then went to the pump station near the river. At this station is a tank used as the first stage of settling river water when needed. The water is then piped to the main processing area into a larger thickener tank for additional settling or additional treatment. The system can treat river water for use as culinary water for use in toilets, showers, etc., but not for potable use.

We then examined the #2 Shaft, which is a much smaller shaft. This shaft is lined, but has no significant surface structures. This shaft is estimated to be about four feet in diameter. It is mainly used to measure the depth of the water table for management of injection fluids.

Other buildings on the site include the change house and cement office building. We then went back up to the tailings dam for an overview of the plant site. The inspection ended with a brief meeting back at the office. In reviewing the old surety estimate, the issue of PCB transformers came up. Moab Salt folks pointed out they had 18 known PCB transformers out of a total of 23 transformers. An old surface facilities drawing (1987 vintage?) was provided by Moab Salt showing a majority of the surface facilities. It should be noted that this drawing does not show all features and some of the features on the drawing have actually been removed.

In conclusion, Moab Salt was to review the copy of the original reclamation estimate and provide edits to the Division describing items which have been removed/reclaimed, or items which are present but not included in the estimate. Moab Salt would also provide a copy of the bond estimate for the underground injection permit which included the two shafts and the two wells. The Division would contact the Oil and Gas section and/or Jerry Jackson at the Division of Water Quality regarding the permitting of

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disposal wells for brines. The Division would use the information gathered during this inspection to begin reviewing and updating the surety estimate. A second site visit may be needed after the draft revision of the surety estimate has been prepared. The Division's goal is to have the updated surety estimate prepared prior to the end of the calendar year.

jb
cc: Ric York, Moab Salt
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